HARC:
HUMAN DIMENSIONS OF THE ARCTIC SYSTEM

Program Announcement
NSF 99-61

OFFICE OF POLAR PROGRAMS

DEADLINE DATE: ***April 30, 1999***

NATIONAL SCIENCE FOUNDATION

SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Name: Human Dimensions of the Arctic System

Short Description/Synopsis of Program: The goal of the Human Dimensions of the Arctic System (HARC) is to enhance understanding of human interaction with physical and biological environmental change in the Arctic. Therefore HARC research must build on the results of previous and ongoing global change studies of the paleo- and contemporary environment to integrate physical, ecosystem and climate research with a broad range of social sciences. HARC research places human activity as a vital driver and as a link among the terrestrial, marine, and climatic subsystems. HARC research will focus exclusively on current and potential impacts on or by human activity that may be expected to occur in response to global change.

Cognizant Program Officer(s):

Dr. Michael Ledbetter or Dr. Fae Korsmo, Program Officer, Room 755, Office of Polar Programs, telephone 703. 306.1029, e-mail: mledbett@nsf.gov or fkorsmo@nsf.gov.

Applicable Catalog of Federal Domestic Assistance (CFDA) No.: 47.078 Polar Programs Grants

ELIGIBILITY

- Limitation on the categories of organizations that are eligible to submit proposals:

  The HARC program will consider research proposals from all approved categories of proposers as described in the Grants Proposal Guide (NSF 99-2, or most recent version). Proposers from For-profit organizations and other Federal Agencies (including Federally Funded Research and Development Centers), however, should contact the program before preparing a proposal for submission.

- PI eligibility limitations: **None**

- Limitation on the number of proposals that may be submitted by an organization:

  Only one proposal may be submitted by a Principal Investigator and he/she may only collaborate in one other proposal as a co-Investigator.

AWARD INFORMATION

- Type of award anticipated: **Standard or Continuing Grant**

- Number of awards anticipated in FY 99: **15-25 awards**

- Amount of funds available: **Approximately $6 million will be available in FY 1999-01**

- Anticipated date of award: **September 1999**

PROPOSAL PREPARATION & SUBMISSION INSTRUCTIONS

- **Proposal Preparation Instructions**
  - Letter of Intent requirements: **None**
  - Preproposal requirements: **None**
  - Proposal preparation instructions: **Standard NSF Grant Proposal Guide instructions**
  - Supplemental proposal preparation instructions**: None**
  - Deviations from standard (GPG) proposal preparation instructions: **None**

- **Budgetary Information**
  - Cost sharing/matching requirements: **None**
  - Indirect cost (F&A) limitations: **None**
  - Other budgetary limitations: **None**

- **FastLane Requirements**
  - FastLane proposal preparation requirements: **FastLane use optional**

- FastLane point of contact: **FastLane Project Officer,telephone: 703. 306.1142, e-mail: Fastlane@nsf.gov**

♦ **Deadline/Target Dates**

- Full Proposal Deadline **5:00 PM, ET, April 30, 1999**

PROPOSAL REVIEW INFORMATION

♦ Merit Review Criteria: **Standard National Science Board approved criteria**

AWARD ADMINISTRATION INFORMATION

♦ Grant Award Conditions

♦ Special grant conditions anticipated: **HARC research must be conducted in accordance with the *Principles for the Conduct of Research in the Arctic*, as prepared by the Social Science Task Force of the U.S. interagency Arctic Research Policy Committee (IARPC) and approved by IARPC on June 28, 1990. The form can be found at http://www.nsf.gov/od/opp/arctic/conduct.htm .**

♦ Special reporting requirements anticipated: **Awardees will be required to archive and document data at the ARCSS Data Coordination Center at the University of Colorado National Snow and Ice Data Center or another center appropriate to the type of data.**

INTRODUCTION

The National Science Foundation (NSF) supports research projects in the Arctic. In 1989 NSF created the Arctic System Science (ARCSS) Program as a component of the U.S. Global Change Research Program (USGCRP) to help understand the arctic system in the context of global change. ARCSS has supported coordinated, interdisciplinary research with both paleo- and contemporary environmental studies. For more information refer to *Toward Prediction of the Arctic System: A Science Plan for the National Science Foundation Arctic System Science (ARCSS) Program*. Arctic Research Consortium of the United States (ARCUS), March, 1998, Fairbanks, AK, 54 pp. (also available on the ARCUS home page of the World Wide Web at http://www.arcus.org/ARCSS_Plan/).

Within ARCSS Paleoenvironmental Arctic Sciences (PARCS) studies, the Greenland Ice Sheet Project (GISP2) has recovered an ice core that dates back to 250,000 years before present, and Paleoclimates from Lakes and Estuaries (PALE) looks at climate changes in the past 2,000, 20,000, and 150,000 years. Land/Atmosphere/Ice Interactions (LAII) and Ocean/Atmosphere/Ice Interactions (OAII) address modern interactions and processes that may be used to understand future impacts of global change, particularly those driven by climate change. Studies of Human Dimensions of the Arctic System (HARC) are the most recent addition to ARCSS and address ways in which humans interact with physical and biological environmental change in the Arctic. The results of ARCSS research and the addition of the HARC component have led to establishment of five major ARCSS priorities:

- How will the Arctic climate change over the next 50 to 100 years?
- How will human activities interact with future global change to affect the sustainability of natural ecosystems and human societies?
- How will changes in arctic biogeochemical cycles and feedbacks affect arctic and global systems?
- How will changes in arctic hydrologic cycles and feedbacks affect arctic and global systems?
- Are predicted changes in the arctic system detectable?

The HARC research program is designed to build on the results and ongoing studies of the paleo- and contemporary environmental components of ARCSS to integrate physical, ecosystem and climate research with a broad range of social sciences. The emphasis of PARCS, LAII, and OAII have been on interpreting the global change significance of fluctuations in the physical and natural environment in light of past climate change, current environmental processes, and projections of the impacts of climate change using model simulations that incorporate climate and process information from the contemporary and paleo-environments. HARC support will build on the information gained from support of projects within those components by adding the human subsystem to the ARCSS goal of understanding the arctic system. Therefore, HARC projects are expected to take an integrative approach that incorporates physical and natural subsystems with a study of the impacts on or by the human subsystem.

The major goal of the HARC program is to understand the dynamics of linkages between human populations and the biological and physical environment of the Arctic, at scales ranging from local to global. The ARCSS/HARC Science Steering Committee has advised that an integrated study of natural and physical sciences, climate,

and a broad range of social science disciplines is required to understand both the human dimensions of changes in the physical environment and the effect of human activity on the environment principally of the Arctic, but also globally. To qualify as HARC research, a project must be related to the role of humans in the arctic system and must include global change. For more information refer to the HARC science plan, *People and the Arctic: A Prospectus for Research on the Human Dimensions of the Arctic System*. Copies may be obtained from Arctic Research Consortium of the United States (ARCUS), May 1997, Fairbanks, AK, 75 pp (available on the ARCUS home page at http://www.arcus.org/HARC/).

PROGRAM DESCRIPTION

Where researchers have studied evidence of past and contemporary cultures, it is clear that survival in the Arctic has depended upon adaptability. Changes in the Arctic have been tied historically to both local and global processes. In addition to change driven by seasonal extremes and variability, human activity within the region has caused significant environmental, economic, social, and cultural change (e.g., colonization, fur trade, gold rush, urbanization), and arctic residents today have the capacity to foster or discourage some of the most extensive and precipitous changes in the region (e.g., large-scale oil development, logging, alteration of fire regimes, redirection of freshwater flow to the arctic basin).

Change has also come from human activity outside the Arctic (e.g., high-seas fishing; transport of ozone, greenhouse gases, and nuclear waste to the region; the hunting of birds and mammals in southern portions of their migratory route). Because humans are a catalyst of change on global and regional as well as local scales, it is essential to incorporate the human dimensions in any study of the arctic system. The human capacity to adapt to change in the Arctic will be further tested, as the polar regions are expected to sustain the early and significant changes associated with contemporary global change. It is not just the Arctic that will be affected, however. Some physical changes that originate in the Arctic could propagate to lower latitudes, changing air and sea temperatures, and affecting economies. For example, major Atlantic and Pacific fisheries could depend on ocean conditions that are influenced by arctic processes affected, in turn, by changes in climate. Ten percent of U.S. oil supplies come from arctic petroleum developments that are designed to perform under current conditions. For these reasons and others, the Arctic is seen as an early warning system for emerging global changes that will ultimately affect other areas as well. The experience of arctic peoples is, thus, instructive for humans elsewhere in the world who are striving to accommodate exacerbated fluctuations and accelerating rates of change in their respective natural and social environments.

The goal of proposals submitted to the Human Dimensions of the Arctic System (HARC) described in this announcement of opportunity, must be to enhance understanding of human interaction with physical and biological environmental change in the Arctic. HARC research places human activity as a vital driver and as a link among the terrestrial, marine, and climatic subsystems. HARC research will focus exclusively on current and potential impacts on human activity that may be expected to occur in response to global change.

The Arctic is extremely vulnerable to climate change and its impacts. The special report on regional impacts of climate change by Working Group II of the Intergovernmental Panel on Climate Change (IPCC) noted that over the period of IPCC assessment, climate change will contribute to major physical, ecological, sociological, and economic changes already begun in the Arctic. The most direct and pronounced changes to the Arctic are likely to be changes in temperature and precipitation, with subsequent effects on sea ice and permafrost. A considerable interdisciplinary effort is needed to collect and analyze information on the implications of these environmental changes for human populations.

The environment dominates many aspects of daily life in the Arctic; environmental changes are likely to have immediate, important consequences to arctic peoples. Human activities themselves may be a cause of environmental changes in the Arctic. For example, archaeologists have found evidence of prey overkill by prehistoric hunters and fishers, followed in some instances by local population declines and site abandonments. More contemporary versions of this dynamic include boom-and-bust cycles of Russian and Canadian fur trades, gold-rush mining, and oil-field development. In addition to consuming resources, settlements may generate contamination on scales ranging from local to regional. Such problems may alter the trophic dynamics of the arctic system, affecting the abundance and safety of terrestrial and marine food resources upon which many arctic peoples depend.

The greatest potential for arctic environmental change, however, may originate from outside the Arctic. Long-range transportation of contaminants, the global build-up of greenhouse gases, and stratospheric ozone depletion all have the potential to alter environments. Arctic ecosystems are particularly sensitive to such alteration and may see relatively early and substantial changes. The natural variability and vulnerability of arctic biophysical

systems, combined with humans' close dependence on those systems, magnify the potential importance of global change for arctic residents. Accurate predictions of future impacts require the inclusion of humans as critical elements in the arctic system.

To understand the dynamics of linkages between human populations and the biological and physical environment of the Arctic, the HARC program supports an integrative, interdisciplinary approach which includes:

- The biophysical basis for future human impacts on the functioning of the Arctic system.
- Recent patterns of habitat use (including land, water, and ice) and resource use (including subsistence, land tenure, domestication, farming, fishing, and resource extraction) where human consequences of global change are expected.
- Patterns of human response and adaptation to environmental change (including settlement decisions, shifts in resource use, migration, diversification, and economic transitions).
- The basis for sustainability, viability, resilience, and vulnerability in future interactions between humans and their environment.
- Development and implementation of an educational framework that offers feedback and learning opportunities for local stakeholders, scientists, and decision makers.

Research projects that (1) illuminate the present and future role of humans in the arctic system; (2) focus on the development of predictive capabilities; and (3) build upon the existing body of ARCSS research will be considered high priority.

HARC research must be conducted in accordance with the *Principles for the Conduct of Research in the Arctic*, as prepared by the Social Science Task Force of the U.S. Interagency Arctic Research Policy Committee (IARPC) and approved by IARPC on June 28, 1990. The form can be found at http://www.nsf.gov/od/opp/arctic/conduct.htm. HARC research should include an education and training component, particularly with respect to Arctic residents. In addition, HARC research should seek, where possible, to:

- Integrate methods and principles from the natural ***and*** social sciences, especially in the context of integrated assessment of the Arctic system;
- Interpret scientific results on temporal and spatial scales that are relevant to policy decisions made at local to global levels;
- Incorporate traditional knowledge
- Involve indigenous peoples in the design and implementation of research; and
- Interact with and complement the activities of other arctic and USGCRP projects.

ELIGIBILITY

Proposals may be submitted by institutions to support individual investigators or small groups. Synergistic collaboration among researchers and collaboration or partnerships with industry or government laboratories is encouraged when appropriate. Only one proposal may be submitted by a Principal Investigator and he/she may collaborate in one other proposal as a co-Investigator. Group and collaborative proposals involving more than one institution must be submitted as a single administration package from one of the institutions involved. **Proposers from For-profit organizations and other Federal Agencies (including Federally Funded Research and Development Centers) should contact the program before preparing a proposal for submission.**

AWARD INFORMATION

Under this announcement, NSF solicits proposals for any funding amount up to $2.0 million per year for up to three years, and expects to make grants at a wide variety of award sizes and durations. NSF expects to fund approximately 15 to 25 standard or continuing three year research awards depending on the quality of submissions and the availability of funds. Approximately $6 million will be available for this initiative in FY 1999-01. Anticipated date of awards: September 1999

PROPOSAL PREPARATION & SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Proposals submitted in response to this program announcement should be prepared and submitted in accordance with the general guidelines contained in the *Grant Proposal Guide* (GPG), NSF 99-2 (or most recent version). The complete text of the GPG (including electronic forms) is available electronically on the NSF Web site at: <http://www.nsf.gov/>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone 301.947.2722 or by e-mail from pubs@nsf.gov.

Proposers are reminded to identify the program announcement number (NSF99-61) in the program announcement/solicitation block on the NSF Form 1207, "*Cover Sheet for Proposal to the National Science*

Foundation." Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Proposal Due Dates

For paper submission of proposals, the paper copies of the proposal **MUST** be received by 5:00 PM, ET, April 30, 1999. Twenty (20) copies of the proposal must be made and submitted to NSF according to the normal procedures for paper proposals identified in the GPG.

For electronic submission of proposals, the proposal **MUST** be submitted by 5:00 PM, local time, April 30, 1998. Copies of the signed proposal cover sheet must be submitted in accordance with the instructions identified below.

Submission of Signed Cover Sheets. For proposals submitted electronically via the NSF FastLane Project, the signed proposal Cover Sheet (NSF Form 1207) should be forwarded to the following address and received by NSF by May 7, 1998:

National Science Foundation
DIS-FastLane Cover Sheet
4201 Wilson Blvd.
Arlington, VA 22230

A proposal may not be processed until the complete proposal (including signed Cover Sheet) has been received by NSF.

D. FastLane Requirements

The NSF FastLane system is available for electronic preparation and submission of a proposal through the Web at the FastLane Web site at <http://www.fastlane.nsf.gov>. The Sponsored Research Office (SRO or equivalent) must provide a FastLane Personal Identification Number (PIN) to each Principal Investigator (PI) to gain access to the FastLane "Proposal Preparation" application. PIs that have not submitted a proposal to NSF in the past must contact their SRO to be added to the NSF PI database. This should be done as soon as the decision to prepare a proposal is made.

In order to use NSF FastLane to prepare and submit a proposal, the following are required:

Browser (must support multiple buttons and file upload)

- Netscape 3.0 or greater
- Microsoft Internet Explorer 4.0 or greater

PDF Reader (needed to view/print forms)

- Adobe Reader 3.0 or greater
- PDF Generator (needed to create project description)
- Adobe Acrobat 3.01 or greater
- Aladdin Ghostscript 5.10 or greater

A list of registered institutions and the FastLane registration form are located on the FastLane Web page.

For paper submission of proposals, the delivery address **must clearly identify the NSF announcement or solicitation number** under which the proposal is being submitted.

PROPOSAL REVIEW INFORMATION

A. Merit Review Criteria

Review of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program officers charged with the oversight of the review process. NSF invites the proposer to suggest at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority serving institutions, adjacent disciplines to that principally addressed in the proposal, etc.

Proposals will be reviewed against the following general merit review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Additional review Criteria

Proposers are urged to read the HARC science plan, *People and the Arctic,* before preparing proposals. Efforts that do not match the goals set forth in the science plan, as described in this Announcement of Opportunity, will not be supported. The HARC Science Plan is available from the Arctic Research Consortium of the U.S. by writing to ARCUS, 600 University Avenue Suite 1, Fairbanks, AK 99709; available on the ARCUS Home Page at http://www.arcus.org/HARC/.

Integration of Research and Education

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learner perspectives. PIs should address this issue in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria. NSF staff will give it careful consideration in making funding decisions.

Integrating Diversity into NSF Program, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- are essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports. PIs should address this issue in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria. NSF staff will give it careful consideration in making funding decisions.

B. Merit Review Process

Most of the proposals submitted to NSF are reviewed by mail review, panel review, or some combination of mail and panel review. Proposals submitted in response to this announcement will be reviewed by panel review only.

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Reviewers will be asked to formulate a recommendation to either support or decline each proposal. A program officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation. In most cases, proposers will be contacted by the program officer after his or her recommendation to award or decline funding has been approved by his or her supervisor. NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals in this category. The time interval begins on the proposal deadline or target date or from the date of receipt, if deadlines or target dates are not used by the program. The interval ends when the division director accepts the program officer's recommendation.

In all cases, after final programmatic approval has been obtained, award recommendations are then forwarded to the Division of Grants and Agreements for review of business, financial and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with an NSF program officer. A principal investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants Officer does so at its own risk.

AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made ***to the submitting organization*** by a Grants and Agreements Officer in the Division of Grants and Agreements (DGA). Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator.

B. Grant Award Conditions

An NSF grant consists of: (1) the award letter, which includes any special provisions applicable to the grant and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable grant conditions, such as Grant General Conditions (NSF GC-1)* or Federal Demonstration Partnership Phase III (FDP) Terms and Conditions. Electronic mail notification is the preferred way to transmit NSF grants to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

* These documents may be accessed electronically on NSF's Web site at: <http://www.nsf.gov/>. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone 301.947.2722 or by e-mail from pubs@nsf.gov.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after expiration of a grant, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented a new electronic project reporting system, available through FastLane, which permits electronic submission and updating of project reports, including information on: project participants (individual and organizational); activities and findings; publications; and, other specific products and contributions. Reports will continue to be required annually and after the expiration of the grant, but PIs will not need to re-enter information previously provided, either with the proposal or in earlier updates using the electronic system.

Effective October 1, 1998, PIs are required to use the new reporting format for annual and final project reports. PIs are strongly encouraged to submit reports electronically via FastLane. For those PIs who cannot access FastLane, paper copies of the new report formats may be obtained from the NSF Clearinghouse as specified above. NSF expects to require electronic submission of all annual and final project reports via FastLane beginning in October, 1999.

D. Data Sharing

Awardees will be required to archive and document data at the ARCSS Data Coordination Center at the University of Colorado National Snow and Ice Data Center or another center appropriate to the type of data. Information about the ARCSS Data Coordination Center may be obtained from Matthew Cross , University of Colorado, Campus Box 449, Boulder, CO 80309-0449; Tel: 303-492-1192; Internet: cross@kryos.colorado.edu or on the ARCSS Data Coordination Center home page on the World Wide Web: http://arcss.colorado.edu

E. New Awardee Information

If the submitting organization has never received an NSF award, it is recommended that the organization's appropriate administrative officials become familiar with the policies and procedures in the NSF *Grant Policy Manual* which are applicable to most NSF awards. The "Prospective New Awardee Guide" (NSF 97-100) includes information on: Administration and Management Information; Accounting System Requirements and Auditing Information; and Payments to Organizations with Awards. This information will assist an organization in preparing documents that NSF requires to conduct administrative and financial reviews of an organization. The guide also serves as a means of highlighting the accountability requirements associated with Federal awards. This document is available electronically on NSF's Web site at: <http://www.nsf.gov/cgi-bin/getpub?nsf97100>.

CONTACTS FOR ADDITIONAL INFORMATION

Questions regarding proposal preparation or submission may be directed to Dr. Michael T. Ledbetter, Arctic System Science Program or Dr. Fae Korsmo, Arctic Social Sciences Program, Office of Polar Programs, National Science Foundation, 4201 Wilson Blvd., Arlington, VA 22230; Tel: (703) 306-1029; Internet: mledbett@nsf.gov or fkorsmo@nsf.gov. For questions related to use of FastLane, contact, FastLane Project Officer, telephone: 703. 306.1142, e-mail: Fastlane@nsf.gov

OTHER PROGRAMS OF INTEREST

The NSF Guide to Programs is a compilation of funding opportunities for research and education in science, mathematics, and engineering. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter. Beginning in fiscal year 1999, the NSF Guide to Programs only will be available electronically. Many NSF programs offer announcements concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices listed in Appendix A of the GPG.

Any changes in NSF's fiscal year programs occurring after press time for the Guide to Programs will be announced in the NSF E-Bulletin, available electronically on the NSF Web site at: <http://www.nsf.gov>. Subscribers can also sign up for NSF's Custom News Service to find out what funding opportunities are available.

ABOUT THE NATIONAL SCIENCE FOUNDATION

NSF funds research and education in most fields of science and engineering. Grantees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals on behalf of all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to participate fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (some programs may have special requirements that limit eligibility).

Facilitation Awards for Scientists and Engineers with Disabilities provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. (For more information, see Section V.G.)

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 306-0090, FIRS at 1-800-877-8339.

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 *Federal Register* 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 *Federal Register* 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton Reports Clearance Officer, Division of Administrative Services,National Science Foundation, Arlington, VA 22230

YEAR 2000 REMINDER

In accordance with Important Notice No. 120 dated June 27, 1997, *Subject: Year 2000 Computer Problem*, NSF Awardees are reminded of their responsibility to take appropriate actions to ensure that the NSF activity being supported is not adversely affected by the Year 2000 problem. Potentially affected items include: computer systems, databases, and equipment. The National Science Foundation should be notified if an awardee concludes that the Year 2000 will have a significant impact on its ability to carry out an NSF funded activity. Information concerning Year 2000 activities can be found on the NSF web site at http://www.nsf.gov/oirm/y2k/start.htm.

Applicable Catalog of Federal Domestic Assistance (CFDA) No.: 47.078 - Polar Programs Grants

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